Computation of Special Functions. By Shanjie Zhang and Jianming Jin. John Wiley & Sons, New York. (1996). 717 pages. $89.95.

Contents:

Preface. Acknowledgements. List of computer programs. 1. Bernoulli and Euler numbers. 2. Orthogonal polynomials. 3. Gamma, beta, and psi functions. 4. Legendre functions. 5. Bessel functions. 6. Modified Bessel functions. 7. Integrals of Bessel functions. 8. Spherical Bessel functions. 9. Kelvin functions. 10. Airy functions. 11. Struve functions. 12. Hypergeometric and confluent hypergeometric functions. 13. Parabolic cylinder functions. 14. Mathieu functions. 15. Spheroidal wave functions. 16. Error function and Fresnel integrals. 17. Cosine and sine integrals. 18. Elliptic integrals and Jacobian elliptic functions. 19. Exponential integrals. 20. Summary of methods for computing special functions. Appendices. A. Derivation of some special differential equations. B. Root-finding methods. C. About the software. Index. Index of computer programs.

A Dynamic Systems Approach to the Development of Cognition and Action. By Esther Thelen and Linda Smith. MIT Press, Cambridge, MA. (1994). 376 pages. $25.00.

Contents:

Series foreword. Acknowledgements. Introduction. I. The nature of development: A dynamic approach. 1. Lessons from learning to walk. 2. The crisis in cognitive development. 3. Dynamic systems: Exploring paradigms for change. 4. Dynamic principles of development: Reinterpreting learning to walk. II. Seeking mechanisms of change. 5. Dynamics of neural organization and development. 6. Categories and dynamic knowledge. 7. The dynamics of selection in human infants. III. Dynamics and the origins of knowledge. 8. The context-specific origin of knowledge. 9. Knowledge from action: Exploration and selection in learning to reach. 10. Real time, developmental time, and knowing: Explaining the A-not-B error. 11. Hard problems: Toward a dynamic cognition. Epilogue. References. Author index. Subject index.

Advances in the Theory of Computation and Computational Mathematics. Edited by Lee L. Keener. Ablex Publishing Corporation, Norwood, NJ. (1996). 243 pages. $65.00.

Contents:

Preface. 1. Generalized rational approximation subject to linear constraints (E.H. Kaufman, Jr. and G.D. Taylor). 2. Communicating asynchronous control structures using Petri nets (Ajoy Kumar Datta and Sukumar Ghosh). 3. Matrix exponential approximations in the numerical solution of differential equations (J.D. Lawson and D.A. Swayne). 4. Perfect graphs (Wen-Lian Hsu). 5. Unbounded fan-in circuits (Ingo Wegener). 6. Fixpoint semantics for a Petri net model of definite clause logic programs (Du Zhang and Tadao Murata). 7. Tree automata and tree pattern matching (Michael Li and Derick Wood). Author index. Subject index.

The Trouble with Computers: Usefulness, Usability, and Productivity. By Thomas K. Landauer. MIT Press, Cambridge, MA. (1995). 425 pages. $15.00.

Contents:

Preface. Prologue: The trouble with computers. I. The productivity puzzle. 1. The evidence. 2. What computers do. 3. The productivity paradox. II. Solutions to the puzzle. 4. Excuses. 5. Reasons. III. What's wrong with them. 6. Usefulness and usability. 7. Software design, development, and deployment. 8. Hype and broken promises: Or, Why do we love them still? IV. How to fix computer. 9. The track record so far. 10. User-centered design. 11. Here's how. 12. User-centered design methods. 13. User-centered development. 14. User-centered deployment: Or, What to use them for and how. V. What then? 15. Fantasy business systems. 16. Life, love, and intellect. Notes. References. Index.

JavaScript: The Definitive Guide, (Beta Edition). By David Flanagan. O'Reilly, Sebastopol, CA. (1996). 454 pages. $29.95.

Contents:

Preface. 1. An overview of JavaScript. 2. Lexical structure. 3. Variables and data types. 4. Expressions and operators. 5. Statements. 6. Objects and arrays. 7. Functions and methods. 8. Built-in objects and functions. 9. Client-side program structure. 10. The window object. 11. The JavaScript object hierarchy. 12. LiveConnect: JavaScript and Java. 13. JavaScript security. 14. Commonly encountered bugs in Navigator 2.0. JavaScript reference. Index.

Optimization and Computational Logic. Kenneth McAloon and Carol Trekoff. John Wiley & Sons, New York. (1996). 531 pages. $59.95.

Contents:

Preface. 1. Constraints and optimization. 2. Loop constructs. 3. Structured linear programming. 4. Conjunction and implication. 5. Conditional disjunction. 6. Negation. 7. Sensitivity analysis. 8. Backtracking. 9. Classical disjunction and combinatorially hard problems. 10. Soundness and completeness. 11. Depth-first branch-and-bound search. 12. The injury method. 13. Tightening the linear relaxation. 14. Further search methods. 15. Mathematical underpinnings. Getting started. References. Lists of models. Name index. Subject index.